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U.S. Department of the Interior • U.S. Geological Survey

# MINERAL INDUSTRY SURVEYS

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## ANTIMONY IN THE SECOND QUARTER 1997

Prices for most forms of antimony remained rather steady during the second quarter of 1997. The New York dealer price for antimony metal, published by Platt's Metals Week, was \$1.10 to \$1.20 per pound at the beginning of the quarter and \$1.05 to \$1.10 per pound at the end of the quarter.

The price of high-tint antimony trioxide, published by American Metal Market, started and ended the quarter at \$1.30 to \$1.45 per pound.

The price for clean antimony sulfide concentrate, published by American Metal Market, started the quarter at \$18.50 to \$19.50 per metric ton unit and ended the quarter at \$19.00 to \$20.00 per metric ton unit. The price for lump antimony sulfide ore (60% antimony content) began the quarter at \$19.50 to \$20.50 per metric ton unit and finished the quarter at \$20.00 to \$21.00 per metric ton unit.

ASARCO Incorporated announced that its lead refinery in Omaha, NE, would cease operation as of June 30, 1997. The plant was also a smelter/refiner for antimony and bismuth products. In its antimony operations, this plant processed primarily antimony ore, but also treated crude antimony trioxide, upgrading it to a higher purity. It was one of only six domestic antimony smelter/refiners (ASARCO Incorporated, 1997).

In Canada, Roycefield Resources Ltd., a Canadian mineral exploration company publicly traded on the Toronto Stock Exchange, made several announcements about its new Beaver Brook antimony mine in Gander, Newfoundland. A \$2.1 million surface and underground exploration program is now underway. This is in addition to \$4.6 million currently being invested to build the 400-ton-per-day concentrator. According to the company, previous surface drilling and underground exploration at the Central Newfoundland property had indicated reserves of 1.40 million tons averaging 4.49% antimony. The 5500-meter drilling program currently underway will cost about \$300,000 and will test areas of the East Zone below the 100-meter horizon to increase reserves below the presently known limits of the ore. A 43-kilometer, 66-kilovolt transmission line to bring electric power to the mine site has been completed by Newfoundland Power at a cost of \$1.6 million. The mill

building construction is now completed. Milling equipment, crushing plant, conveyors, and ore bins are now being assembled and installed. Mining is scheduled to start this summer and milling shortly thereafter. Discussions are being held to sell antimony concentrate to large processors. Hydro-metallurgical test work to convert antimony concentrate to antimony trioxide has been successfully completed. A demonstration plant, scheduled to be constructed as soon as the concentrator is operational, will assist in the design and construction of the commercial size antimony trioxide facility to follow. Antimony trioxide, the best selling form of antimony, is used as a flame retardant by the plastics industry (Roycefield Resources Ltd., 1997).

In Guatemala, it was reported that antimony ore and concentrate are being produced by Minas de Guatemala SA from several mines at Ixtahuacan. Output is exported mainly to Metaleurop Weser Blei GmbH in France. After Bolivia and Mexico, Guatemala has been the third largest producer of antimony in Latin America (Mining Journal, 1997).

From Japan, an article shed light on consumption of antimony trioxide in that country. Flame retardants account for 96% of sales of antimony trioxide there. Consumption of antimony trioxide in Japan has increased following the implementation of the Product Liability Act in July 1995, which requires the use of flame retardants in a wide range of products such as electronic appliances, textiles, building materials, furniture, and vehicles (Roskill's Letter from Japan, 1997).

## References Cited

- ASARCO Incorporated, 1997, Asarco reports second quarter results: New York, NY, ASARCO Incorporated press release, July 24, 4 p.
- Mining Journal, 1997, Mining Annual Review, Guatemala: Mining Journal, Mining Annual Review, p. 101.
- Roskill's Letter from Japan, 1997, Antimony—Steady increase in demand in flame retardants: Roskill's Letter from Japan, no. 254, p. 12-17.
- Roycefield Resources Ltd., 1997, Update on activities: Newcomm Internet Services, June 12, 1997. (Accessed June 16, 1997, on the World Wide Web at URL <http://www.newcomm.net/roycefield/PRESSREL/06-12-97.htm>)

TABLE 1  
SALIENT ANTIMONY STATISTICS 1/

(Metric tons, antimony content)

	1996	1997	
	Total p/	First quarter	Second quarter
Production:			
Primary smelter 2/	25,700	6,170	6,210
Secondary 3/	7,900	561	562
Imports for consumption:	37,600	10,500	6,750 4/
Ore and concentrate	1,000	296	207 4/
Metal	18,300	4,390	3,070 4/
Oxide 5/	18,300	5,820	3,480 4/
Exports:	5,270	1,350	886 4/
Metal, alloys and scrap	462	197	145 4/
Oxide 5/	4,810	1,160	741 4/
Consumption of primary antimony	13,100	3,240	3,160
Price: Average cents per pound 6/	146.58	100.71	109.85
Stocks end of period 7/	XX	11,300 r/	11,500

p/ Preliminary. r/ Revised. XX Not applicable.

1/ Data are rounded to three significant digits, except prices.

2/ Nearly all smelter output is trioxide.

3/ A review of secondary lead smelting, the source of nearly all secondary antimony, showed that recovery of secondary antimony had been markedly overstated in the 1994 and earlier annual reviews.

4/ Data for April and May only.

5/ Antimony content is calculated by the U.S. Geological Survey.

6/ New York dealer price for 99.5% to 99.6% metal, c.i.f. U.S. ports.

7/ Producer and consumer stocks.

TABLE 2  
INDUSTRY STOCKS OF PRIMARY ANTIMONY IN THE  
UNITED STATES 1/ 2/

(Metric tons, antimony content)

Type of material	1997	
	First quarter	Second quarter
Metal	4,310 r/	4,260
Oxide	3,690 r/	3,570
Other 3/	3,340	3,690
Total	11,300 r/	11,500

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Estimated 100% coverage based on reports from respondents who held 96% of the total stocks of antimony at the end of 1996.

3/ Includes ore and concentrate, sulfide, and residues.

TABLE 3  
INDUSTRIAL CONSUMPTION OF PRIMARY ANTIMONY 1/ 2/

(Metric tons, antimony content)

Class of material consumed	1996	1997	
	Total p/	First quarter r/	Second quarter
Metal	1,990	507	492
Oxide	11,100	2,720	2,660
Other 3/	22	12	15
Total	13,100	3,240	3,160

p/ Preliminary. r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Estimated 100% coverage based on reports from respondents who consumed 81% of the total antimony in 1996.

3/ Includes sulfide and residues.

TABLE 4  
INDUSTRIAL CONSUMPTION OF PRIMARY ANTIMONY, BY CLASS OF  
MATERIAL PRODUCED 1/ 2/

(Metric tons, antimony content)

Product	1996	1997	
	Total p/	First quarter	Second quarter
Metal products:			
Antimonial lead	1,140	246	165
Other 3/	1,160	333 r/	360
Total metal products	2,300	579	525
Nonmetal products:			
Ceramics and glass	898	215 r/	251
Other 4/	1,090	260	322
Total nonmetal products	1,990	475 r/	573
Flame-retardants:			
Plastics	6,220	1,440	1,360
Other 5/	421	124 r/	100
Total flame retardants	6,640	1,570 r/	1,460
Total reported	10,900	2,620 r/	2,560
Full industry totals 2/	13,100	3,240	3,160

p/ Preliminary. r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

2/ Estimated 100% coverage based on reports from respondents who consumed 84% of the total antimony in 1996.

3/ Includes ammunition, bearing metal and bearings, cable coverings, castings, sheet and pipe and solder.

4/ Includes ammunition primers, pigments, and plastics.

5/ Includes adhesives, rubber and textiles.

TABLE 5  
U.S. IMPORTS FOR CONSUMPTION OF ANTIMONY, BY COUNTRY 1/

(Metric tons, antimony content)

Country	1996	1997				
		First quarter	March	April	May	Jan.-May
Ore and concentrate:						
Bolivia	222	--	--	--	--	--
China	473	257	118	40	53	350
Other	310	38	10	95	19	154
Total	1,000	296	128	135	72	503
Metal:						
Bolivia	153	2	--	--	--	2
China	13,500	3,680	1,000	1,410	1,340	6,430
Hong Kong	1,620	307	--	--	40	347
Kyrgyzstan	1,240	117	--	--	--	117
Mexico	1,330	220	88	97	131	448
Other	421	32	23	22	25	81
Total	18,300	4,360	1,110	1,530	1,530	7,430
Oxide:						
Belgium	1,080	324	129	126	128	578
Bolivia	2,480	622	--	425	219	1,270
China	7,730	2,780	968	807	509	4,090
Guatemala	183	319	83	50	116	485
Kyrgyzstan	150	134	--	83	83	300
Mexico	3,150	640	182	175	254	1,070
South Africa	2,860	799	216	366	--	1,170
Other	718 r/	201	38	86	52	339
Total	18,300	5,820	1,620	2,120	1,360	9,290
Grand total	37,600	10,500	2,850	3,790	2,970	17,200
Other antimony compounds (gross weight)	63	24	10	13	19	56

r/ Revised.

1/ Data are rounded to three significant digits; may not add to totals shown.

Source: Bureau of the Census. Antimony content is calculated by the U.S. Geological Survey.